

Health of Home and School.

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The Danger From Lead Water Pipe.

The work in the Laboratory of Hygiene in finding dangerous quantities of lead in samples of water from homes in which the family physician has found symptoms which have made him suspicious of lead poisoning has strongly emphasized the danger from lead poisoning in families using water which flows or is pumped through lead pipe.

In the histories of chronic lead poisoning from this source in this State and elsewhere two notable observations are often made:

One is that a given water may for years be conducted through lead pipe meanwhile dissolving only very slight traces of lead and then, for some cause or other, becoming loaded with dangerous quantities of lead.

The other is that among the several members of a family all using the same lead-polluted water, one person only or only a part of the members become affected so as to present marked or serious symptoms. It would appear that different individuals have very varying degrees of susceptibility to the action of lead.

Symptoms.

The symptoms which result from the long-continued taking of small quantities of lead may be very obscure, simulating those due to many other causes and raising no suspicion of lead poisoning.

Serious conditions of ill health may develop without colic and some other symptoms which are commonly looked for as typical of lead poisoning. The lead-line on the gums is not invariably present. The symptoms usually are a combination of some of the following:

Pallor of the face with, in some cases, a grayish-yellow hue, emaciation, weakness, shortness of breath, and the appearance of premature senility.

Indigestion, loss of appetite, the abdomen not usually bloated; continuous and often very obstinate constipation, though diarrhoea is sometimes a prominent symptom; even when no colic appears the pain in the gastric region and abdomen is sometimes so continuous as to suggest malignant disease. The lead-line and severe constipation are pretty sure to be well marked in cases in which lead colic has supervened.

Often an increased tension of the pulse, and frequently some of the other pathologic conditions are present which go to make up a serious disease of the arteries, which ends the life of many persons past middle age. Some of the symptoms present are disturbance of the heart's action and shortness of breath.

Disturbance of the renal function, often quite marked. Muscular pains and pain and swelling of the joints, which are usually thought by the patient to be rheumatic. In some cases gout is closely simulated. The pain is usually worse at night.

Headaches, neuralgia and sometimes neuritis, weakening or paralysis of muscular action, interfering with walking or the free use of the hands; muscular tremor; neurasthenia; cerebral symptoms and convulsions in children.

In some cases there has been a very marked improvement in the health when the patient has discontinued the use of water which has been shown to contain lead. In other cases in which the diseased conditions have gone far or have existed long, recovery is slow or only partial.

Histories of Cases.

The following condensed histories of cases of poisoning from water with traces of lead in it will help to illustrate the characteristics of the symptoms.

Case 1. A man only 38 or 39 years of age, yet he presented marked symptoms of premature aging. Could not sleep in bed; had to sit up nights. He had laryngitis and lost his voice. Lead poisoning was suspected. The sample sent to the Laboratory was found to contain lead. After getting the water supply from another source, he improved greatly in every way.

Case 2. Mrs.....had been troubled with numbness of the arms for a long while especially at night. Since the water supply was found to contain lead and the water supply was changed the numbness of the arms has entirely disappeared and the general health of the family has improved.

Case 3. A man 54 years old. Chief symptoms were colic, constipation, weakness of all the muscles, lost 10 pounds in weight, some tremor and numbness of the hands. Marked improvement after discontinuing the use of the lead-polluted water.

Case 4. A young woman. She was very pale, somewhat emaciated and quite weak. Severe lead colic with blue line on the gums. Vomited considerably and was constipated. There was marked improvement after abandoning the lead polluted water supply.

Case 5. Home bought eight years ago. The water supply was pumped through 64 feet of lead pipe. The mother had a severe attack of neuritis and was weak. The two boys had frequent attacks of stomach-ache, as they called it. The lead pipe was finally removed and an iron pipe substituted. Since then, the attacks of lead colic, as it appears to have been, are becoming very rare.

Case 6. In a general way, one Maine physician relates as follows his observations of cases which seem to be due to lead poisoning. All or nearly all had more or less nervous symptoms, some in one way and some in another. Nearly all complained of heart, short of breath, etc., though I could find no organic trouble. All had a good deal of trouble with the stomach; most of them had no desire for food though one or two wanted to eat all the time but lost strength and felt sick; constipation the rule, though diarrhoea in one or two cases; more or less vague pains in the muscles resembling rheumatism, muscles stiff and sore.

Case 7. A physician writes that in one family without doubt the father has lead poisoning. He has the blue line on his gums, constipation, etc., but the most important symptom is nervousness which at times almost amounts to insanity. He also has much pain in the joints and has taken rheumatic medicine without getting relief. Other members of the family are well although they have all drunk the lead-polluted water.

Amount of Lead Surface.

In some instances serious lead poisoning has developed when the piece of pipe through which the water came was very short. In one severe experience with lead poisoning, the trouble came from an old lead clock-weight which was found in the bottom of the well. On the other hand, water sometimes comes through many feet of lead pipe without producing symptoms. There is less danger, though not always an absence of harm, when the water is constantly flowing through the pipe.

Lead Poisoning Among Animals.

In one instance where the human dwellers on the premises suffered from lead poisoning, three head of stock were lost in one winter, and at another home where there were cases of lead poisoning, the water killed the chickens, so the doctor thinks. In another Maine home where lead pipe was the cause of poisoning to the members of the family, a valuable driving horse developed weakness of the hind legs and of his back, "went all to pieces," as the owner expressed it, and had to be killed. These fatalities among animals are merely suggestive; but other observations on the effects of lead-polluted water seem to indicate that an unthrifty condition and colic may be the result of watering animals with such water.